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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/043,532	01/11/2002	Matthew P.J. Baker	GB 010022	6232

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EXAMINER	
DEAN, RAYMOND S	

ART UNIT	PAPER NUMBER
2684	

DATE MAILED: 04/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/043,532	BAKER ET AL.	
	Examiner	Art Unit	
	Raymond S Dean	2684	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 March 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 - 24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 January 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1 – 3, 6, 10, and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Lundby et al. (US 2001/0011024).

Regarding Claim 1, Lundby teaches a radio communication system having physical control channels arranged for the bi-directional transmission of sets of control information between a secondary station and a plurality of primary stations, and at least one data channel between one or more primary stations, selected from the plurality of primary stations, and the secondary station for the transmission of data from the or each selected primary station to the secondary station (Section 0046, CDMA systems have

forward and reverse control channels thus there will be an inherent bi-directional transmission of sets of control information), wherein respective closed-loop power control means are provided for adjusting individually the power of some or all physical control channels, or parts thereof, to which a set of control information is mapped (Figure 1A, Sections 0010, 0047 – 0051).

Regarding Claim 2, Lundby teaches all of the claimed limitations recited in Claim 1. Lundby further teaches means provided for encoding each downlink physical control channel, or part thereof, to which a set of control information is mapped with a respective scrambling code to enable the associated primary station to be identified (Section 0046 lines 16 – 19, since this is a CDMA system there are inherent spreading codes that distinguish the base stations).

Regarding Claim 3, Lundby teaches all of the claimed limitations recited in Claim 1. Lundby further teaches means provided for transmitting power control commands relating to each downlink physical control channel, or part thereof, to which a set of control information is mapped via a single time-multiplexed uplink physical channel (Figure 1A, Section 0051).

Regarding Claim 6, Lundby teaches a primary station for use in a radio communication system having physical control channels arranged for the bi-directional transmission of sets of control information between a secondary station and a plurality of primary stations, and at least one data channel between one or more primary stations, selected from the plurality of primary stations, and the secondary station for the transmission of data from the or each selected primary station to the secondary station

(Section 0046, CDMA systems have forward and reverse control channels thus there will be an inherent bi-directional transmission of sets of control information), wherein closed-loop power control means are provided for adjusting the power of some or all physical control channels between the primary station and the secondary station, or parts thereof, to which a set of control information is mapped (Figure 1A, Sections 0010, 0047 – 0051).

Regarding Claim 10, Lundby teaches a secondary station for use in a radio communication system having physical control channels arranged for the bi-directional transmission of sets of control information between a secondary station and a plurality of primary stations, and at least one data channel between one or more primary stations, selected from the plurality of primary stations, and the secondary station for the transmission of data from the or each selected primary station to the secondary station (Section 0046, CDMA systems have forward and reverse control channels thus there will be an inherent bi-directional transmission of sets of control information), wherein closed-loop power control means are provided for adjusting individually the power of some or all physical control channels, or parts thereof, to which a set of control information is mapped (Figure 1A, Sections 0010, 0047 – 0051).

Regarding Claim 20, Lundby teaches a method of operating a radio communication system having physical control channels arranged for the bi-directional transmission of sets of control information between a secondary station and a plurality of primary stations, and at least one data channel between one or more primary stations, selected from the plurality of primary stations, and the secondary station for the

transmission of data from the or each selected primary station to the secondary station (Section 0046, CDMA systems have forward and reverse control channels thus there will be an inherent bi-directional transmission of sets of control information), the method comprising operating respective closed-loop power control means for adjusting individually the power of some or all physical control channels, or parts thereof, to which a set of control information is mapped (Figure 1A, Sections 0010, 0047 – 0051).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 4 – 5, 7, and 11 – 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lundby et al. (US 2001/0011024) in view of Mohebbi (US 6,603,971 B1).

Regarding Claim 4, Lundby teaches all of the claimed limitations recited in Claim 1. Lundby does not teach means responsive to requests from the secondary station are provided for selecting the primary station connected to the or each data channel.

Mohebbi teaches means responsive to requests from the secondary station are provided for selecting the primary station connected to the or each data channel (Column 13 lines 1 – 24).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the selection method taught above in Mohebbi in the system of Lundby for the purpose of providing optimal downlink performance thereby enabling the mobile station to receive the transmitted data reliably as taught by Mohebbi.

Regarding Claim 5, Lundby teaches all of the claimed limitations recited in Claim 1. Lundby does not teach means provided for establishing a plurality of communication links between a primary station and the secondary station, for determining which of the primary stations comprise selected primary stations, and for determining which of the communication links are selected.

Mohebbi further teaches means provided for establishing a plurality of communication links between a primary station and the secondary station, for determining which of the primary stations comprise selected primary stations, and for determining which of the communication links are selected (Figure 5, Column 13 lines 1 – 28).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the selection method taught above in Mohebbi in the system of Lundby for the purpose of providing optimal downlink performance thereby enabling the mobile station to receive the transmitted data reliably as taught by Mohebbi.

Regarding Claim 7, Lundby teaches all of the claimed limitations recited in Claim 6. Lundby does not teach means provided for acquiring or releasing a data channel in response to changing radio link conditions, thereby becoming or ceasing to be a selected primary station.

Mohebbi teaches means provided for acquiring or releasing a data channel in response to changing radio link conditions, thereby becoming or ceasing to be a selected primary station (Column 13 lines 1 – 24).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the acquire and release method taught above in Mohebbi in the system of Lundby for the purpose of providing optimal downlink performance thereby enabling the mobile station to receive the transmitted data reliably as taught by Mohebbi.

Regarding Claim 11, Lundby teaches all of the claimed limitations recited in Claim 10. Lundby does not teach means provided for determining which of the primary stations comprise the selected primary station or stations in response to changing radio link conditions.

Mohebbi teaches means provided for determining which of the primary stations comprise the selected primary station or stations in response to changing radio link conditions. (Column 13 lines 1 – 24).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the selection method taught above in Mohebbi in the system of Lundby for the purpose of providing optimal downlink performance thereby enabling the mobile station to receive the transmitted data reliably as taught by Mohebbi.

Regarding Claim 12, Lundby teaches all of the claimed limitations recited in Claim 10. Lundby does not teach means provided for transmitting each set of uplink control information over a separate physical channel.

Mohebbi teaches means provided for transmitting each set of uplink control information over a separate physical channel (Column 2 lines 23 – 27, the power control bits will be transmitted over a separate physical channel).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the above control information method taught in Mohebbi in the system of Lundby for the purpose of controlling the power of the uplink such that data can be received reliably as taught by Mohebbi.

Regarding Claim 13, Lundby in view of Mohebbi teaches all of the claimed limitations recited in Claim 12. Lundby further teaches means provided for distinguishing the physical channels by use of different channelization codes (Section 0046 lines 16 – 19, since this is a CDMA system there are spreading codes for distinguishing the channels).

Regarding Claim 14, Lundby in view of Mohebbi teaches all of the claimed limitations recited in Claim 12. Lundby further teaches means provided for distinguishing two of the physical channels by transmitting a first physical channel, which uses the in-phase component of the carrier, and a second physical channel, which uses the quadrature-phase component of the carrier (Section 0046 lines 16 – 19, typical CDMA systems use QPSK modulation, which comprises in-phase and quadrature components).

Regarding Claim 15, Lundby in view of Mohebbi teaches all of the claimed limitations recited in Claim 14. Lundby further teaches means provided for interrupting an uplink physical control channel when uplink data transmission is required (Section

0046 lines 16 – 19, a typical CDMA system comprises control channels and data channels, transmission of data occurs a plurality of different times in CDMA systems thus there will be interruption of the uplink physical control channels when uplink data transmission is required).

Regarding Claim 16, Lundby teaches all of the claimed limitations recited in Claim 10. Lundby does not teach means provided for transmitting each set of uplink control information in a time-multiplexed manner over a single physical channel.

Mohebbi teaches means provided for transmitting each set of uplink control information in a time-multiplexed manner over a single physical channel (Column 2 lines 23 – 27).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the above control information method taught in Mohebbi in the system of Lundby for the purpose of controlling the power of the uplink during soft handoff such that data can be received reliably as taught by Mohebbi.

Regarding Claim 17, Lundby in view of Mohebbi teaches all of the claimed limitations recited in Claim 16. Mohebbi further teaches means provided for achieving the time-multiplexing by reducing the rate of transmission of power control commands (Column 2 lines 23 – 27).

Regarding Claim 18, Lundby in view of Mohebbi teaches all of the claimed limitations recited in Claim 17. Mohebbi further teaches the reduction of rate is in proportion to a number greater than or equal to the number of primary stations with which sets of control information are exchanged (Column 2 lines 23 – 27, the greater

the number of base stations the greater the number of power control bits and the smaller the number of base stations the smaller the number of power control bits the rate will therefore vary in proportion to the number of power control bits).

Regarding Claim 19, Lundby in view of Mohebbi teaches all of the claimed limitations recited in Claim 16. Mohebbi further teaches means provided for achieving the time-multiplexing by including separate power control relating to each primary station with which sets of control information are exchanged in a single physical control channel (Column 2 lines 23 – 27).

6. Claims 21 – 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lundby et al. (US 2001/0011024) in view of Cudak et al. (US 6,801,512).

Regarding Claim 21, Lundby teaches a radio communication system having physical control channels arranged for the bi-directional transmission of sets of control information between a secondary station and a plurality of primary stations, and at least one data channel between one or more primary stations, selected from the plurality of primary stations, and the secondary station for the transmission of data from the or each selected primary station to the secondary station (Section 0046, CDMA systems have forward and reverse control channels thus there will be an inherent bi-directional transmission of sets of control information), wherein respective closed-loop power control means are provided for adjusting individually the power of some or all physical control channels, or parts thereof, to which a set of control information is mapped (Figure 1A, Sections 0010, 0047 – 0051).

Lundby does not teach wherein respective fast cell selection means are provided for selecting an optimum primary station form the plurality of primary stations based on said selected primary station having a lowest transmit power.

Cudak teaches wherein respective fast cell selection means are provided for selecting an optimum primary station form the plurality of primary stations based on said selected primary station having a lowest transmit power (Column 3 lines 27 – 29).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the fast cell selection method taught in Cudak in the system of Lundby for the purpose of eliminating the soft handoff by switching the forward link form the first base station to the second base station very quickly such that only one base station transmits to the mobile station at any given point in time as taught by Cudak.

Regarding Claim 22, Lundby teaches a primary station for use in a radio communication system having physical control channels arranged for the bi-directional transmission of sets of control information between a secondary station and a plurality of primary stations, and at least one data channel between one or more primary stations, selected from the plurality of primary stations, and the secondary station for the transmission of data from the or each selected primary station to the secondary station (Section 0046, CDMA systems have forward and reverse control channels thus there will be an inherent bi-directional transmission of sets of control information), wherein closed-loop power control means are provided for adjusting the power of some or all physical control channels between the primary station and the secondary station, or

parts thereof, to which a set of control information is mapped (Figure 1A, Sections 0010, 0047 – 0051).

Lundby does not teach wherein respective fast cell selection means are provided for selecting an optimum primary station form the plurality of primary stations based on said selected primary station having a lowest transmit power.

Cudak teaches wherein respective fast cell selection means are provided for selecting an optimum primary station form the plurality of primary stations based on said selected primary station having a lowest transmit power (Column 3 lines 27 – 29).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the fast cell selection method taught in Cudak in the system of Lundby for the purpose of eliminating the soft handoff by switching the forward link form the first base station to the second base station very quickly such that only one base station transmits to the mobile station at any given point in time as taught by Cudak.

Regarding Claim 23, Lundby teaches a secondary station for use in a radio communication system having physical control channels arranged for the bi-directional transmission of sets of control information between a secondary station and a plurality of primary stations, and at least one data channel between one or more primary stations, selected from the plurality of primary stations, and the secondary station for the transmission of data from the or each selected primary station to the secondary station (Section 0046, CDMA systems have forward and reverse control channels thus there will be an inherent bi-directional transmission of sets of control information), wherein

closed-loop power control means are provided for adjusting individually the power of some or all physical control channels, or parts thereof, to which a set of control information is mapped (Figure 1A, Sections 0010, 0047 – 0051).

Lundby does not teach wherein respective fast cell selection means are provided for selecting an optimum primary station form the plurality of primary stations based on said selected primary station having a lowest transmit power.

Cudak teaches wherein respective fast cell selection means are provided for selecting an optimum primary station form the plurality of primary stations based on said selected primary station having a lowest transmit power (Column 3 lines 27 – 29).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the fast cell selection method taught in Cudak in the system of Lundby for the purpose of eliminating the soft handoff by switching the forward link form the first base station to the second base station very quickly such that only one base station transmits to the mobile station at any given point in time as taught by Cudak.

Regarding Claim 24, Lundby teaches a method of operating a radio communication system having physical control channels arranged for the bi-directional transmission of sets of control information between a secondary station and a plurality of primary stations, and at least one data channel between one or more primary stations, selected from the plurality of primary stations, and the secondary station for the transmission of data from the or each selected primary station to the secondary station (Section 0046, CDMA systems have forward and reverse control channels thus there

will be an inherent bi-directional transmission of sets of control information), the method comprising operating respective closed-loop power control means for adjusting individually the power of some or all physical control channels, or parts thereof, to which a set of control information is mapped (Figure 1A, Sections 0010, 0047 – 0051).

Lundby does not teach wherein respective fast cell selection means are provided for selecting an optimum primary station form the plurality of primary stations based on said selected primary station having a lowest transmit power.

Cudak teaches wherein respective fast cell selection means are provided for selecting an optimum primary station form the plurality of primary stations based on said selected primary station having a lowest transmit power (Column 3 lines 27 – 29).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the fast cell selection method taught in Cudak in the system of Lundby for the purpose of eliminating the soft handoff by switching the forward link form the first base station to the second base station very quickly such that only one base station transmits to the mobile station at any given point in time as taught by Cudak.

7. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lundby et al. (US 2001/0011024) in view of Baum et al. (US 6,385,462 B1).

Regarding Claim 8, Lundby teaches all of the claimed limitations recited in Claim 6. Lundby does not teach means provided for determining operational parameters of

the data channel depending on the power level of a physical control channel, or part thereof, to which a set of control information is mapped.

Baum teaches means provided for determining operational parameters of the data channel depending on the power level of a physical control channel, or part thereof, to which a set of control information is mapped (Column 4 lines 22 – 28, the MCR is an operational parameter).

It would have been obvious to one ordinary skill in the art at the time the invention was made to use the MCR taught above in Baum in the CDMA system of Lundby for the purpose of implementing an adaptive power allocation, which can achieve high system capacity, and system coverage as taught by Baum.

Regarding Claim 9, Lundby in view of Baum teaches all of the claimed limitations recited in Claim 8. Baum further teaches modulation and/or coding schemes (Column 4 lines 22 – 28).

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond S Dean whose telephone number is 571-272-7877. The examiner can normally be reached on 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay A Maung can be reached on 703-308-7745. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Raymond S. Dean
April 5, 2005

NAY MAUNG
SUPERVISORY PATENT EXAMINER